REMARKS

The term "means" was removed from the claims.

In order to more clearly distinguish the present invention over the prior art cited by the Examiner, independent claims 21 and 30 were each amended to include the phrase "wherein the gain control signal is at a higher wavelength than any of the optical input signal channels".

Additionally, a new dependent apparatus claim 39 and a new dependent method claim 40 were added to recite that "the wavelength of the gain control signal is around 10 to 15 nm higher than any of the optical input signal channels". Basis of these claims lies in paragraph 1 of page 7 of the specification, as originally filed.

In section 2 of the Office Action, the Examiner raised the objection that the subject matter of the independent claims 21 and 30 was anticipated by U.S. Patent Publication No. 2002/0196527 to Veith. It is respectfully submitted that the independent claims, as amended, are both novel and inventive over Veith.

Veith relates to a method for the amplification of wavelength division multiplex (WDM) signals. The pump light is designed so that at least one WDM signal is individually amplified by a stimulated Brillouin scattering (SBS) process in an optical waveguide. In order for optical amplification to occur, the pump light must be at a higher energy (and, hence, via Planck's law, a higher frequency/a ***lower wavelength***) than the signal being amplified.

For example, it will be seen in Figure 1 of Veith that the pump light (fp) is at a higher wavelength than the light being amplified (f4). Similarly, in Figure 2, each of the pump wavelengths (f1'-f5') is at a higher frequency than the signals being amplified (f1-f5). In the wavelength representation shown in Figure 6, the Brillouin pump signal (P6) has a shorter

wavelength (i.e., at a higher frequency, and hence of a higher energy) than the lower amplitude light signal 7 being pumped.

By contrast, the present invention relates to an optical amplifier system in which the optical input signal channel is ***not*** amplified by the process of stimulated Brillouin scattering. As noted within paragraph 1 of page 7 of the specification, the gain control signal is at a ***higher wavelength*** than any of the input signal channels to avoid interference with the input signal channels.

The "gain control signal" of the present invention is, as the name suggests, for providing control of the gain in an optical amplifier, rather than for providing amplification. As appreciated by the present inventors, the optical amplifier gain is dependent on signal power variations. Thus, the optical amplifier gain will vary if the optical power experienced by the amplifier changes, e.g., as the input signal channels are attenuated by transmission along the fiber (page 2, paragraph 1).

In order to avoid power variations along the length of the fiber (or, to at least decrease the variation in power along the length of the fiber), the gain control signal is provided. The power level in any section of the optical fiber is thus the sum of the power of the aggregate signal channels and the SBS-backscattered component of the gain control signal power in that section (e.g., see page 9). As noted within paragraph 1 of page 7, to avoid interference with the signal channels, the gain control signal is generated with a wavelength that is around 10 to 15 nm ***higher*** than the input signal channels.

Veith does ***not*** disclose that the optical signal that produces stimulated Brillouin scattering is at a higher wavelength than any of the optical input signal channels. Consequently, the present invention, as defined by the amended independent claims, is novel over Veith.

Furthermore, there would be no motivation to the person of ordinary skill in the art to amend the apparatus disclosed in Veith such that the relevant optical signal is at a higher wavelength than any of the optical input signal channels. To do so, would be to ***prevent*** the apparatus disclosed in Veith from performing its intended function as the relevant optical signal would then be at a lower frequency (and, hence, at a lower energy) than the optical input signal channels and, hence, unable to amplify any of those channels. In other words, such a modification would render Veith inoperable for its intended purpose.

Thus, the present invention, as defined by the amended claims, is not only novel but also unobvious over the cited prior art.

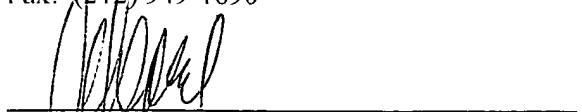
In keeping with applicants' duty of candor, accompanying PTO Form-1449 lists U.S. Patent Publication No. 2001/0030796 A1, which was cited in a corresponding Chinese office action. A copy of this reference is enclosed, together with the fee of $180.00.

Petition is hereby made for a one-month extension of the period to respond to the outstanding Official Action to February 2, 2009. A check in the amount of $130.00, as the Petition fee, is enclosed herewith. If there are any additional charges, or any overpayment, in connection with the filing of this response, the Commissioner is hereby authorized to charge any such deficiency, or credit any such overpayment, to Deposit Account No. 11-1145.

Wherefore, a favorable action is earnestly solicited.

Respectfully submitted,

KIRSCHSTEIN, ISRAEL, SCHIFFMILLER & PIERONI, P.C.
Attorneys for Applicant(s)
425 Fifth Avenue, 5th Floor
New York, New York 10016-2223
Tel: (212) 697-3750
Fax: (212) 949-1690



Alan Israel
Reg. No. 27,564